

Study protocol Implementation of the Veder contact method (VCM) in daily nursing home care for people with dementia: an evaluation based on the RE-AIM framework

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ABSTRACT

Objectives: People with dementia in nursing homes benefit from person-centred care methods. Studies examining the effect of these methods often fail to report about the implementation of these methods. The present study aims to describe the implementation of the Veder contact method (VCM) in daily nursing home care.

Method: A process analysis will be conducted based on qualitative data from focus groups with caregivers and interviews with key figures. To investigate whether the implementation of VCM is reflected in the attitude and behaviour of caregivers and in the behaviour and quality of life of people with dementia, a controlled observational cohort study will be conducted. Six nursing home wards implementing VCM will be compared with six control wards providing Care As Usual. Quantitative data from caregivers and residents will be collected before (T0), and 9–12 months after the implementation (T1). Qualitative analysis and multilevel analyses will be carried out on the collected data and structured based on the constructs of the RE-AIM framework (Reach, Effectiveness, Adoption, Implementation, Maintenance).

Conclusion: By using the RE-AIM framework this study introduces a structured and comprehensive way of investigating the implementation process and implementation effectiveness of person-centred care methods in daily dementia care.

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Background

The person-centred care approach for people with dementia in Europe was developed by Tom Kitwood (1997). He suggested that behaviours of the person with dementia were not only caused by changes in the brain due to dementia, but were also influenced by the complex interaction between the person with dementia and her or his social environment. As many studies show, providing psychosocial and person-centred care interventions that are aimed at fulfilling the (unmet) needs of people with dementia living in nursing homes, such as reminiscence, music therapy and emotion-oriented care, positively influences the quality of life of people with dementia (Dröes, Van der Roest, Van Mierlo, & Meiland, 2011; Olazarán et al., 2010; Testad et al., 2014; Van Mierlo, Van der Roest, Meiland, & Dröes, 2010; Whitaker et al., 2014). This is not surprising, as the experienced unmet needs in nursing home settings are frequently located in areas that people with dementia indicate being important for their quality of life (Dröes et al., 2006; Hancock, Woods, Challis, & Orrel, 2006). Hancock et al. (2006) reported the following most common unmet needs based on their research among people with dementia in care homes: lack of pleasant daytime activities, company, and adequate support when feeling psychologically distressed. These needs, as well as other needs, such as preservation of self-esteem, e.g. being accepted for who you are, feeling attached, being understood and having social

contact with family and professional caregivers, are mentioned by people with dementia as very relevant to their quality of life (Dröes et al., 2006). At the same time, providing person-centred care also positively influences the job satisfaction of caregivers on psychogeriatric wards (Pol-Grevelink, Jukema, & Smits, 2012; Van Dijk, Van Weert, & Dröes, 2011).

From the 'living-room theatre' Veder method to the Veder contact method in daily care

In the past 25 years many psychosocial interventions were developed, varying from 'multisensory stimulation' to movement activation, reminiscence and pet therapy, and many initiatives were taken to shape person-centred care (Finnema, Dröes, Ribbe, & Van Tilburg, 2000; Olazarán et al., 2010; Van der Kooij et al., 2013; Van Dijk, Van Weert, & Dröes, 2012; Van Mierlo et al. 2010). The Veder method is a new person-centred care method. It provides tools to improve the communication with people with dementia, in order to achieve reciprocity in the contact with them, and to promote feelings of well-being, identity and self-esteem (see also 'Intervention' section). The Veder method combines core elements of treatment from existing methods, such as reminiscence, validation, integrated emotion-oriented care and neuro linguistic programming, with the use of theatrical elements like characters, music, costumes, props and poetry. Combining these methods is expected to

increase the effect. The Veder method was originally developed as a 'living-room theatre performance', an interactive theatre play, performed by professional actors. Subsequently, professional caregivers in nursing homes were also trained to apply the method. Research by Van Dijk et al. (2012) showed that these 'living-room theatre performances' by professional actors had significantly more positive effects on people with dementia than a regular reminiscence activity. Although they experienced pleasure in executing the Veder method as group activity, it was also difficult for the trained caregivers to perform the theatre play with the same quality and intensity as professional actors (Tol, Van Weert, Hermanns, & Dröes, 2011; Van Dijk, Van Weert, & Dröes, 2011; Van Dijk, Van Weert, Hermanns, & Dröes, 2011; Van Dijk et al., 2012). However, when the trained caregivers discussed the Veder method as 'living-room theatre performance' in focus groups, they suggested that rather than using it as a group activity, the method could have (more) added value by offering the key elements in one-on-one contact during the daily care, for instance the use of theatrical elements and a more explicit use of the voice (e.g. intonation), timing and presentation (e.g. 'acte de présence'). Integrating the Veder method in 24-hour daily care instead of offering it occasionally in a single theatre performance was expected to have two main advantages. First, caregivers would no longer have to develop and perform a complete theatre programme, but would learn how to successfully apply elements of the method in daily care. This would save time and improve the caregivers' communication skills in daily care. Second, although a previous study had shown that the Veder method theatre play provided by professional actors positively influenced the behaviour, mood and quality of life of people with dementia during the theatre play, with carryover effects until two hours after the performance (Van Dijk, Van Weert, & Dröes, 2011; Van Dijk, Van Weert, Hermanns, & Dröes, 2011; Van Dijk et al., 2012), caregivers and researchers expected long-term effects to be limited. The implementation of a more continuous and ongoing programme in daily care was expected to result in a more stable, continuous effect in the long term. Based on these expectations caregivers and managers of the nursing homes expressed the need to integrate the key elements of the Veder method as group activity during individual care moments in daily nursing home tasks, e.g. during meals, coffee/tea breaks, and other activities in the living room, like reading the newspaper or washing the dishes together. Following these expectations and wishes of caregivers, Foundation Theatre Veder adapted the Veder method as 'living-room theatre performance' for application in 24-hour care. The adapted method is called Veder contact method (VCM). With VCM caregivers learn to apply *theatrical*, *poetic* and *musical* communication to stimulate a focused interaction and reciprocity in the contact with the person with dementia. An example of VCM is the use of reminiscence, the retrieval of memories, combined with music, theatre and/or poetry. In 2012, before the start of this implementation study, Foundation Theatre Veder successfully tried out the implementation of VCM on one nursing home ward. (This ward is not included in the present study.)

Aim of the study

Transferring and implementing person-centred care methods in daily dementia care is a very complex challenge (Grol &

Grimshaw, 2003; Lawrence, Fossey, Ballard, Moniz-Cook, & Murray, 2012; Vernooij-Dassen & Moniz-Cook, 2014). Many studies report problems with the delivery of the intervention by caregivers, such as poor adherence and variation in practice (Low et al., 2013; Spijker et al., 2013; Wenborn et al., 2013). This may explain the absence of positive effects in comparison with usual care in many studies (Olazarán et al., 2010). Without an accurate assessment of whether the intervention was delivered as intended, conclusions regarding the outcome measures are questionable (Boersma, Van Weert, Lakerveld, & Dröes, 2015; Burgio et al., 2001). It is therefore important to control for this 'implementation error' (Vernooij-Dassen & Moniz-Cook, 2014). An adequate understanding of which aspects of the intervention are successfully implemented is a prerequisite to be able to interpret the results correctly (Moniz-Cook et al., 2008). The present study investigates whether, and under what conditions, key elements from the original Veder method as 'living-room theatre performance' are applicable and implementable as VCM in 24-hour daily care. In addition, we investigate how this implementation is reflected in the communicative behaviour and attitudes of caregivers, the Care Plan and the behaviour and quality of life of people with dementia. The study aims to provide insight into the complexity of implementation of VCM in daily practice by structurally investigating the 'implementation effectiveness'. Implementation effectiveness refers to the degree to which the implementation of the innovation has been successful, in terms of execution of the intervention as aimed and integration of the intervention into daily practice (Van der Kooij et al., 2013). This study maps the implementation effectiveness of VCM in daily care in a structured way, guided by a widely used implementation framework (RE-AIM; see below). More concretely, with the aid of this framework, the present implementation study aims to give insight into: how many caregivers participate in the intervention, the outcomes of applying the intervention, the extent to which the caregivers adopt VCM in their daily work and to what extent they apply VCM in the long run. In addition to gaining insight into the facilitating and impeding factors of the implementation process, this study aims to provide knowledge about the effectiveness of the used implementation strategies (Grol & Grimshaw, 2003) and to contribute to a more successful implementation of this and other psychosocial interventions in daily care.

Research questions

This three-year implementation study aims to answer the central question 'Has VCM been integrated effectively in daily nursing home care?' The following research questions are formulated:

- (1) How is VCM integrated in daily nursing home care, and what are the conditions for successful implementation?
- (2) How is the implementation of VCM reflected in:
 - (a) The behaviour and attitudes of (professional) caregivers?
 - (b) The Care Plan?
 - (c) The behaviour and quality of life of people with dementia?
- (3) Does implementation of VCM on nursing home wards have a positive impact on the job satisfaction of professional caregivers who were trained in applying the method in daily care?

Table 1. Definitions of the five dimensions of the RE-AIM framework and definition in this study protocol.

RE-AIM evaluation dimensions		
Dimension (level)	Original definition by Glasgow <i>et al.</i> (1999)	Definition in present study
Reach (individual)	Proportion of the target <i>population</i> that participated in the intervention.	Proportion of <i>caregivers</i> in care settings that participated in the intervention during the study.
Efficacy (individual)	Success rate if implemented as in guidelines; defined as <i>positive outcomes minus negative outcomes</i> .	Outcomes (positive and negative) regarding <i>knowledge, skills and/or attitudes</i> of the professionals in the study.
Adoption (organization)	Proportion of <i>settings, practices and implementation plans</i> that will adopt this intervention.	Proportion of <i>caregivers that actually adopt</i> the intervention in the study.
Implementation (organization)	Extent to which the intervention is implemented as intended in the real world.	Extent to which the intervention in the study is implemented as intended in the real world, <i>including implementation barriers and facilitators</i> .
Maintenance (individual & organization)	Extent to which a <i>programme</i> is sustained over time.	Extent to which the <i>intervention</i> is sustained over time.

The RE-AIM framework

The theoretical model used in this implementation study to evaluate the implementation effectiveness, is the RE-AIM framework. The RE-AIM framework was originally developed to support the planning and evaluation of the implementation of evidence-based health care interventions (Glasgow, Vogt, & Boles, 1999; About RE-AIM, downloaded at http://www.re-aim.hnfe.vt.edu/about_re-aim/what_is_re-aim/index.html). It consists of five constructs: Reach, Efficacy, Adoption, Implementation and Maintenance (RE-AIM), and is widely used to assess the level of implementation of interventions (Dzewaltowski, Glasgow, Klesges, Estabrooks, & Brock, 2004). In a recent review, Boersma *et al.* (2015) systematically examined the degree of (successful) implementation of psychosocial interventions in nursing homes based on the RE-AIM framework. The review confirmed that the RE-AIM framework is a suitable model to assess the implementation effectiveness of psychosocial interventions in psychogeriatric nursing home care. Details of the RE-AIM framework are presented in Table 1.

Table 2 explains how the research questions of the present study into the implementation of VCM are related to the five constructs of the RE-AIM framework.

Method

Design

We will use a mixed method design, a combination of qualitative and quantitative methods, to provide a more elaborated understanding of the implementation of VCM in the complex context of nursing home care and to gain a greater confidence in the conclusions drawn from the study (Johnson, Onwuegbuzie, & Turner, 2007). Another reason for using a combination of methods is the different nature of the research questions. For answering the first research question a qualitative approach is most appropriate. We want to understand the complex process of implementing VCM in the daily nursing home care on six wards, and will therefore conduct a process analysis. Here the emphasis will be on describing the implementation process according to the RE-AIM framework and tracing facilitators and barriers during implementation. Conditions for successful implementation will be derived from this process analysis. The second research question requires a quantitative method to obtain objective data on behaviour changes. A controlled observational cohort study will be carried out, using existing and valid observational instruments that are developed for quantitative analysis. Six wards from four nursing homes on which VCM is implemented (experimental groups) will be compared with six

Table 2. Summary of the used measuring instruments.

Research question	Definition of the research question	Construct of the RE-AIM*	Measuring instrument (measuring moment)
1.	How does the integration of VCM in daily nursing home dementia care take place, and what are the conditions under which VCM can be successfully implemented?	R, A, I, M	- Focus groups (T1) - Interviews (T1) - Implementation score (T1)
2 2a.	How is the implementation of VCM reflected in: Behaviour of (professional) caregivers;	R, A, I	- Observation caregivers: (T0, T1) - Observation list Veder method - Quality of Caregivers' Behaviour in dementia care (QCB) - Self-report questionnaire: (T0, T1) - Approaches to Dementia Questionnaire (ADQ)
2b.	The Care Plan;	R, I, M	- Care Plan analysis (T0, T1) - Focus groups (T1) - Interviews (T1)
2c.	Behaviour and quality of life of people with dementia.	E	- Observation person with dementia: (T0, T1) - QUALIDEM - INTERACT
3.	Did implementation of VCM in nursing home wards have a positive impact on the job satisfaction of professional caregivers who were trained in applying the method in daily care?	R, E, A	- Self-report questionnaire: (T0, T1) - Leiden Quality of Work Questionnaire - Focus groups (T1) - Interviews (T1)

Note: *R = Reach; E = Effectiveness; A = Adoption; I = Implementation; M = Maintenance.

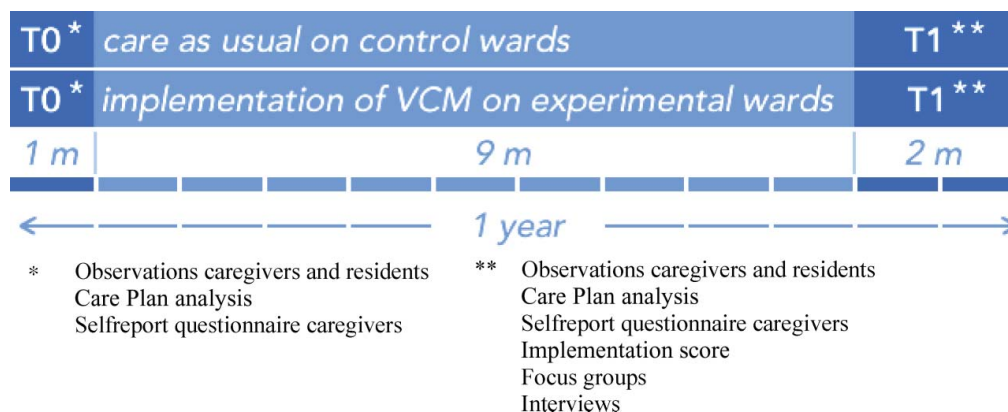


Figure 1. Design and timeline of the implementation study on each of the experimental and control wards.

(control) wards from the same four nursing homes where Care as Usual (CAU) is provided. Matching takes place on type of ward (open or closed), number of residents in the ward and applied care method (e.g. small-scale living or conventional residential living). This will provide insight into whether the implementation of VCM is reflected in attitude and behaviour changes of the caregivers and behaviour changes and quality of life of the people with dementia. This same design will be used to answer the third question. The idea is that the effective application of VCM will result in more contact with people with dementia and as a consequence increased job satisfaction. Additionally, qualitative research will be conducted to gain a deeper insight into the influence of VCM on job satisfaction. Both on the wards where VCM will be implemented and on the control wards where CAU is provided, measurements will be carried out on two occasions, on T0 (baseline, before the implementation of VCM) and on T1 (nine months after the start of the implementation). (See Figure 1.)

Implementation of VCM in daily care

Intervention

Both the Veder method as 'living-room theatre performance' and VCM for daily care combine components from existing psychosocial methods in dementia care (see introduction). With VCM the caregivers apply *theatrical, poetic and musical communication* in daily care to stimulate a focused interaction and reciprocity in the contact with the person with dementia. The theatrical stimuli are applied to the (often apathetic) people with dementia, sometimes literally to wake them up, and tempt them into interaction. Both the Veder method as group activity and VCM follow a fixed procedure sequence. The consecutive steps are (1) greeting by one-on-one contact, (2) appealing to long-term memory, (3) communication about the present time (connection to short-term memory), and (4) saying goodbye. These caregivers applying VCM are taught to apply these different steps during daily care moments. The

relation between the procedural steps, the key elements and the communication strategies of VCM are described in Table 3.

Implementation strategy

The implementation of VCM consists of several components. Table 4 outlines the implementation activities. First Foundation Theatre Veder started with a try-out of VCM on one ward (this ward did not participate in the research). Next Foundation Theatre Veder establishes agreements with the staff of the participating nursing homes. The agreements made with the staff of the nursing homes are respectively described in the section 'Settings and sample'.

The VCM training starts with a team meeting to inform the caregivers about the method and the implementation trajectory. Experienced observers start with an observation using the method Dementia Care Mapping (Beavis, Simpson, &

Table 4. Overview of the implementation strategy of VCM.

Used implementation strategy of VCM in 24-hour daily dementia care	
1. Try out	
<ul style="list-style-type: none"> • Performing try out • Veder contact method • Evaluation and adjusting VCM 	
2. Contract with the participating nursing home wards	
<ul style="list-style-type: none"> • Lay out the possible impeding and promoting factors of the implementation (for example appointing a project leader) • Staff agrees with creating conditions to implement VCM • Staff insures that caregivers can participate in the different components of the implementation process 	
3. Training to teach caregivers to apply VCM in their daily work	
<ul style="list-style-type: none"> • Team meeting • Observation caregivers with Dementia Care Mapping method • Feedback meeting with caregivers and staff of the ward • Three training sessions of three hours during three months • After three and six months, two three-hour follow-up sessions • Coaching on the job (three hours) preceding the second, third and fourth training sessions • Evaluation of the implementation with the caregivers and staff 	

Table 3. Relation between the procedural steps, key elements and communication strategies of the Veder contact method (VCM) in daily care.

Procedural steps of VCM	Key elements of VCM	Examples of the communication strategies
Greeting by one-on-one contact	Theatrical communication	Presentation/act de présence, timing and intonation/tone
Appealing to long-term memory	Poetic communication	Rhythm, associating, intonation/sound
Communication about the present time	Musical communication	Recognizable songs of the past, humming, intentional use of music
Saying goodbye		

Graham, 2002; Brooker & Surr, 2005), which highlights what is going well and on what points the caregivers can improve contact and meet the wishes and needs of the residents. In the following feedback meeting the observations are 'mirrored' to, and discussed by, the team. Together with the team learning objectives are formulated for the training programme: 'What are the practical problems we want to work on, how can we use VCM in this and how do we link VCM to the Care Plan'. Afterwards, feedback is given to the management aiming to support the team to achieve their learning objectives. These implementation activities together take about one month.

Next, trainers of Foundation Theatre Veder offer each team of a ward, with a maximum of 20 caregivers, three training sessions of three hours. Each team has one trainer:

- (1) The first training session focuses on the course of dementia, the function of the long-term memory during the course of dementia, reminiscing and one-on-one contact.
- (2) The second training session focuses on theatrical communication, learning to use intonation, appearance (acte de présence) and timing in the contact with the residents. The relation between long-term memory and the present time, and the importance of a 'saying goodbye' ritual (as a closure of the contact) is discussed.
- (3) The third training session focuses on theatrical communication, with the use of poetic communication and musical communication. Also, a connection is made with the life histories of the residents.
- (4) After three months a fourth session (follow-up) of three hours takes place: a training which focuses on repeating the information from the first three sessions and on experiences of the caregivers using theatrical, poetic and musical communication in their encounters with the resident. Also, the caregivers learn to use feedback to coach each other using VCM in their work and to improve their quality of care.
- (5) After six months a fifth session (follow-up) of three hours takes place: a training in which VCM is connected to the 'authentic strength' of the caregivers. Together the caregivers learn to start up a communication with the residents with the use of theatrical, poetic and musical communication. Also a link is made to the Care Plan. This training ends with an evaluation of the training programme. In conclusion consultation takes place with the administrator of the ward about how to maintain the implementation of VCM.

Preceding the second, the third and the fourth training sessions, three three-hour 'coaching on the job' sessions are provided. The trainers coach the caregivers on multiple areas of VCM and observe the behaviour of caregivers and residents. The observation results are discussed during the training sessions, and role-play is used to learn the skills needed to apply VCM.

Settings and sample

A total of 12 nursing home wards in six nursing homes will be involved in the study: six experimental wards and six control wards. To recruit wards, Foundation Theatre Veder will search for nursing homes located in different parts of the Netherlands, who have used the 'Veder method as living-room

theatre performance', and ask them if they are willing to implement VCM in daily care and to participate in the study. When an experimental ward agrees to participate, a comparable ward, within the same nursing home but preferable on another location, where CAU is provided, will be asked to participate as control ward. The staff of the six nursing home wards will have to agree to create the preconditions for implementation of VCM on the experimental wards, e.g. active engagement of the administrator and management during the implementation trajectory; willingness to solve organizational and logistical bottlenecks during the implementation; availability of an appropriate training location and willingness to engage in, and reflect on, long-term implementation of the method, e.g. by means of a long-term implementation plan. Also the head nurses of the experimental wards will be asked to actively participate in the implementation process, e.g. they have to ensure that caregivers can participate in all components of the training programme. When they agree to all of this, they will be invited to participate in the study. Commitment to the conditions and participation in the implementation will be laid down in a contract. The staff of the control wards ($n = 6$) have to ensure no new psychosocial interventions are implemented during the study. Included caregivers who change workplace during the study cannot be included on another ward later on in the study.

A total of 80 caregivers from the experimental wards and 80 caregivers from the control wards are to be included in the study. Inclusion criteria are: the caregiver has to work on the ward with a permanent contract; volunteers who take care of people with dementia at regular times may also participate in the study. Temporary staff, students and caregivers who only work night shifts were not eligible to participate.

The aim is to recruit 81 people with dementia in the experimental group and 81 people with dementia in the control group. The planned sample size of 64 will yield 80% power to show an effect size of $d = 0.6$, assuming two-sided testing at a significance level of 0.05 (Cohen, 1977). The sample size is corrected for clustering of residents within wards, where we assumed an average number of eight participating residents per ward and an intra-class correlation coefficient of 0.05. In Dutch nursing homes 57% of the residents are deceased two years after admission (Koopmans, Ekkerink, & Weel, 2003). Because the study period lasts 12 months per nursing home, a loss of 25% of participating residents must be taken into account. The desired sample size per group (experimental and control) is therefore 81 people with dementia. Residents with dementia will be included in the study after the legal guardian of the residents grants permission for their participation in the study.

Procedure

Caregivers

During a ward meeting the head nurses of the participating six experimental wards and/or the researcher will inform all caregivers verbally and via written information (brochure) about the implementation of VCM and the study. All employees from the participating teams who are involved in the daily care of people with dementia, will take part in the implementation process and are to be trained in the application of VCM. The researcher and/or the head nurse will inform all caregivers from the control wards verbally and via written information about the study. All caregivers from the

experimental and control wards will be assured that the collected data are treated confidentially. They will be asked to sign an informed consent form if they agree to participate in the study.

Residents

The legal guardians of the residents from the participating experimental and control nursing home wards will be informed by means of a letter and asked to sign the informed consent form if they agree with the participation of the resident in the study. A stamped addressed envelope will be included to return the informed consent form. Legal guardians are contacted by telephone if the informed consent form is not returned in time. Before the start of the observations, the persons with dementia who are able to communicate verbally will also be asked for their (verbal) permission to participate in the study and to be observed.

Data collection

In the present study both qualitative and quantitative data are collected on caregivers and residents. Table 2 describes the measurement instruments/tools and measurement moments for each research question, as well as the applicable constructs of the RE-AIM framework (Boersma et al., 2015).

Methods research question 1

Focus groups

To gain insight into the implementation of VCM in daily nursing home care, focus groups will be used to discuss and explore the facilitators and barriers to implementation. After the implementation of VCM (T1) focus groups with caregivers are held on every experimental ward to gain insight into their personal perceptions, the usability of VCM, and opinions and attitudes towards VCM. Also, the observed reactions of the residents when caregivers apply elements of VCM and the influence of the implementation of the method on their job satisfaction will be discussed. Based on the RE-AIM framework and with use of the results of the process analysis of the implementation of the Veder method as 'living-room theatre performance' (Van Dijk, Van Weert, & Dröes, 2014), a TOPIC list and interview protocol will be developed for the focus group and interviews. A total of eight focus group sessions (one per trained team) will be held, each with five to eight caregivers. The focus groups are guided by a moderator while an observer takes notes. All focus groups are tape-recorded.

Interviews

To trace facilitators and barriers to the implementation of VCM, which are related to the five constructs of the RE-AIM framework, semi-structured interviews with key figures involved in the implementation of VCM (directors and administrators, supervisors, nursing staff, staff and trainers of Foundation Theatre Veder) will be conducted at T1 on the experimental wards. The interviews will be conducted by the researcher and will focus on the following topics:

(1) the application and use of elements of VCM (implementation effectiveness); (2) the perceived usefulness of VCM in daily care and integration in the Care Plan; (3) the impact of VCM on the work experience of the caregivers and the responses of the residents; (4) the implementation process, including promoting and impeding factors when

implementing VCM, on a micro (operational) level, meso (organizational) level and macro level (financing, regulation); (5) evaluation of the various implementation activities, such as training, job coaching and feedback; (6) human and material conditions for the implementation and continuation of the application of VCM in the daily care; (7) finally, themes that emerged from the focus groups and require further clarification in the interviews.

Implementation score according to Foundation Theatre Veder

On the experimental wards the trainers of Foundation Theatre Veder will assess the degree of successful implementation by giving a score between 0 and 10. Zero means 'no activities done to implement VCM, caregivers followed no training'; 10 means 'VCM is optimally implemented, all caregivers followed the training programme and received 'coaching on the job' on the ward, VCM is used by all caregivers'. In other words: the higher the score, the better VCM is implemented.

Methods research question 2

Quantitative data are gathered via non-participating observations from caregivers and residents, a self-report questionnaire filled in by caregivers, and by analysis of the Care Plans of the residents. The instruments that will be used are described below in more detail. The aim of the observations is to determine to what extent VCM is actually applied by the caregivers in daily dementia care and how people with dementia respond to the intervention. These observations of the caregivers and residents will be carried out in the living room during two time periods: from 10:00 am until 1:00 pm (around coffee and lunch time) and from 3:00 pm until 6:00 pm (around tea and dinner time). Two observations on one day will be obtained for the residents (a total of six hours of observations). For the caregivers one observation (morning or evening) is obtained (maximum of three hours of observation), because the caregivers work in shifts.

Instruments caregivers

Baseline information: information will be gathered at baseline on demographic characteristics of the caregivers' age, gender, nationality, education, current position, work experience in current job, number of hours working according to the contract.

Communication and behaviour of the caregivers (Quality of Caregivers' Behaviour in dementia care (QCB)): the QCB is a 25-item observation instrument with four answer categories (four-point Likert scale from 'not at all', 'a little', 'moderately' to 'maximally') based on the dialectical framework developed by Kitwood (1997). The dialectical framework describes a variety of interactions (communicative behaviour of caregivers) that have a positive or negative impact on the well-being of residents. Interactions that have a positive effect on the individual 'personhood' and well-being of the residents are called 'positive person work' (PPW). Negative interactions undermine the individual's 'personhood' and are called 'malignant social psychology' (MSP). The QCB provides an overall assessment of the extent to which caregivers show 12 positive and 13 negative behaviours during a defined period of time. In Additional file 1 (*Quality of Caregivers' Behaviour in dementia care*) the original scheme of Kitwood (1997), the adapted scheme of Van Weert et al. (2006), and the slightly modified

scheme that will be used for the present study are described in detail. One negative interaction ‘ignoring feelings and emotions’ is added because this is behaviour VCM aims to change. Two positive interactions are deleted: ‘respecting privacy’ because this interaction is not applicable in the living room and ‘stimulation’ is deleted because it refers to the use of multisensory activities, e.g. the use of aromatherapy or massage, which are not part of VCM. In this way the two subscales are constructed as the sum of the items of PPW (range 0–36) and MSP (range 0–39). The higher the scores, the more positive (PPW) or negative (MSP) interactions the caregivers show. The internal reliability of the original subscales ‘positive behaviour’ and ‘negative behaviour’ is good (Cronbach’s alpha 0.88 and 0.78, respectively) as is the inter-rater reliability (mean Pearson’s r 0.77 and 0.79, respectively) (Van Weert et al., 2006).

Observation list Veder contact method (VCM): The observation list Veder contact method is an instrument with 16 items and four answer categories (range 1–4) related to different components of the Veder contact method. This instrument determines the extent to which caregivers apply elements and techniques of VCM. The observation list with 34 items was developed in an earlier study (Tol et al., 2011) to measure the quality of the execution of the ‘living-room theatre performance’. For the present study the observation list was adapted for VCM to make it applicable in daily dementia care. Items concerning the performance of the ‘living-room theatre performance’ are deleted (24 items) because they are not applicable for VCM in daily care. Six items that measure components of VCM in daily care are added. An example of a question in this instrument is: ‘Is the communication (in terms of body language, tone of voice, speed of speech and voice expression), adjusted to the individual? In addition the number of offered theatrical stimuli and the way the resident(s) responds will be scored. The inter-rater reliability of the original observation list ‘Veder method as living-room theatre performance’ was 71.9% (Van Dijk et al., 2012).

Attitudes towards dementia (Approaches to Dementia Questionnaire): In order to investigate whether the caregivers have a different attitude towards people with dementia after the VCM training, they are requested to fill in a self-report questionnaire: the Approaches to Dementia Questionnaire (ADQ) (Lintern, Woods, & Phair, 2000). This 19-items questionnaire has a five-point Likert scale and was used before in dementia care research in the Netherlands (Hattink, Meiland, Van der Roest, et al., 2015; Hattink, Meiland, Campman, et al., 2015; Lauriks, Osté, Hertogh, & Dröes, 2008). The scale contains two attitude dimensions of nursing staff towards people with dementia: ‘hope’ and ‘person-centred’. The hope dimension shows the optimistic/pessimistic beliefs of the caregiver in the (future) possibilities of a person with dementia. The person-centred dimension reflects the extent to which the caregiver recognizes the person with dementia as a unique, conscious and valuable human being (Lauriks et al., 2008). Earlier research showed the subscales of the ADQ had good reliability (Cronbach’s $\alpha = 0.76$ for hope and 0.85 for orientation to person) (Lintern, 2001).

Instruments residents

Baseline information: information will be gathered at baseline on demographic characteristics, age, gender, marital status, education, years living on the nursing home ward, years with diagnosis dementia, current use of psychopharmaca, and

scores on the Mini Mental State Examination (MMSE), or alternatively on the Brief Cognitive Rating Scale if the resident is not able to answer the questions of the MMSE.

Quality of Life of people with Dementia (QUALIDEM): The QUALIDEM is an observation instrument to assess the quality of life of people with mild to severe dementia (Bouman et al., 2011; Ettema, 2007; Ettema et al., 2007a, 2007b). The instrument consists of 37 items with four answer categories (never, rarely, sometimes, always) and nine subscales: caring relationship, positive affect, negative affect, restless/nervous behaviour, positive self, social relationships, social isolation, feeling at home and having something/activities to do. With these subscales a quality of life profile can be obtained. The (subscales of the) QUALIDEM was examined in a previous study for scalability, intra-rater reliability (ICC = 0.73–0.89), inter-rater reliability (ICC = 0.47–0.79), internal consistency (0.60–0.90), convergent and discriminant validity, and concurrent validity (Ettema et al., 2007a, 2007b).

Mood and Behaviour of persons with dementia (INTERACT): INTERACT is an observation instrument designed to measure mood, behaviour and interactions of nursing home residents that was successfully used before in intervention studies into psychosocial methods for people with dementia, e.g. the Veder method and multisensory stimulation (Baker et al., 2001; Baker, Dowling, Wareing, Dawson, & Assey, 1997; Van Diepen et al., 2002; Van Dijk et al., 2012; Van Weert et al., 2004; Van Weert, Van Dulmen, Spreeuwenberg, Bensing, & Ribbe, 2005; Van Weert, Van Dulmen, Spreeuwenberg, Ribbe, & Bensing, 2005). The instrument consists of 22 items that assess mood, speech, interaction with others, relating to the environment, need for prompting, alertness/activity. The items identify both positive and negative behaviours of residents. Using a five-point Likert scale a score is given regarding the extent to which the relevant conduct was present during the three hours of observation in the living room (‘not at all’ to ‘almost all the time’). The adapted 24-item scale of Van Weert, Van Dulmen, Spreeuwenberg, Ribbe, and Bensing (2005) is taken as the basis. Taking into account the findings of the research into the effect of the Veder method by Van Dijk et al. (2012) nine items were added: three items were added in the subcategory ‘mood’: ‘laughing’, ‘enthusiasm’ and ‘confused’; two items were added in the category ‘relating to person’: ‘touching’ and ‘cooperated’; three items were added in the category ‘relating to environment’: ‘attentive to/focused on activity/objects’, ‘responding to activity (songs etc.) or objects’ and ‘comments or questions about activities/objects’ and one item was added in the category ‘alertness/activity’: ‘relaxed/content’. Reported inter-observer reliability in previous studies is medium to high (Kappa (κ) is 0.3) (Van Dijk et al., 2012) and mean Pearson’s r ranging from 0.83 (Van Weert, Van Dulmen, Spreeuwenberg, Ribbe, & Bensing, 2005) to 0.99 (Baker et al., 2001).

Face expression scale (FACE): ‘Overall mood’ of the residents with dementia is measured with the FACE, based on a three-point Likert scale (Van Weert, Van Dulmen, Spreeuwenberg, Ribbe, & Bensing, 2005).

- ☺ if smile predominated;
- ☺ if the expression was neutral;
- ☹ if frown predominated.

The inter-rater reliability of FACE was 0.84 (mean Pearson’s r) in the study by Van Weert, Van Dulmen, Spreeuwenberg, Ribbe, and Bensing (2005) and 0.48 in the study of Van Dijk et al. (2012).

Care Plan analyses

Care Plan analyses will be carried out to determine whether the principles of VCM are concretely elaborated in the resident's Care Plan. By means of a checklist, we will analyse whether the personal preferences of the resident, for example regarding music, social contacts, activities, habits, are described in the residents' Care Plan. Also, information about the life history, the mental and emotional well-being of the residents in the Care Plan is analysed.

Methods research question 3

Job satisfaction (Leiden Quality of Work Questionnaire): The validated self-report questionnaire Leiden Quality of Work Questionnaire (LQWQ) (Van der Doef & Maes, 1999) will be used to investigate whether the work is experienced differently by caregivers after the VCM training. The LQWQ consists of 23 items, has five subscales and has been applied earlier in research among caregivers in dementia care (Te Boekhorst, Willemse, Depla, Eefsting, & Pot, 2008). The subscales are: work and time pressure (five items; Cronbach's alpha 0.78), job satisfaction (six items; Cronbach's alpha 0.86), autonomous decision making (four items; Cronbach's alpha 0.72), social support from colleagues (four items; Cronbach's alpha 0.82) and social support from supervisor (four items; Cronbach's alpha 0.90) (Te Boekhorst et al., 2008).

Data analysis

Qualitative analysis

To answer the first research question only qualitative data will be used. All stakeholder interviews and focus groups will be audio-taped and transcribed verbatim. The transcripts will be analysed and categorized on text fragments. A deductive method will be used to analyse text fragments on the predetermined 'TOPIC list' consisting of the five constructs of the RE-AIM framework (Braun & Clarke, 2006). For this thematic analysis, text fragments about the same theme will be classed as 'meaning units'. These meaning units will be coded using the 'TOPIC list'. Analysing the data in this way increases the reproducibility of the study. To ensure reliability of the results, two researchers will independently code 25% of the interviews and focus groups. When they disagree about what code to assign to a text fragment, discussion will take place until consensus is reached. The rest of the interviews will be coded by one researcher. Using a qualitative analysis computer software program (NVivo) the data will be categorized into the categories of the TOPIC list, based on the five constructs of the RE-AIM framework.

Quantitative analysis

To answer the second research question ('how the implementation of VCM is reflected in the attitude and behaviour of caregivers, in the Care Plan of the people with dementia and in behaviour and quality of life of people with dementia') and the third research question ('the impact of implementation of VCM on the job satisfaction of professional caregivers'), the quantitative data shall be used first. Relevant baseline characteristics will be descriptively summarized using frequencies, means and standard deviations or median and interquartile ranges, depending on the frequency distribution of the data.

This will be done for the experimental and control groups and separately for residents and caregivers. Baseline characteristics of experimental and control groups will be compared using the chi-squares test or Fisher's exact test for dichotomous or nominal variables and the independent samples *t*-test or Mann–Whitney *U*-test for interval or ordinal variables. To examine if the means on continuous outcome measures at T1 differ between control and experimental groups, a multi-level analysis will be carried out that will take into account clustering of residents and caregivers within wards. The following independent variables will be included in the first model: group (control or experimental) and baseline measurement (T0)-value of the outcome measure. Next, a more elaborate model is generated, with degree of implementation, type of ward and variables on which the groups differ at baseline as additional independent variables, to see whether the treatment effect changes when corrected for possible confounders. A random effect for ward will be included in the model (two-level model). For the dichotomous outcomes the same procedure will be used, but the analysis will be done with the general estimating equations. An exchangeable correlation structure will be used to take into account the clustering within wards. All statistical tests will be conducted two-sided with an alpha level of 0.05.

Qualitative data from the interviews and focus groups will be used to interpret the results of the multilevel analysis of the quantitative data.

Discussion

This implementation study, which will take three years (final results expected to be published in autumn 2016) is executed to clarify whether the implementation of VCM as a communication method can help caregivers in their daily caring tasks to meet the frequently experienced unmet needs of people with dementia, especially for having social contact and company, maintaining or improving self-esteem, being accepted for who they are, feeling attached and being understood. When these needs are met by the use of VCM, the quality of life of people with dementia will improve (Dröes et al., 2006; Hancock et al., 2006). Most studies, including those in the field of dementia care, focus on the effectiveness of new methods. The way the method is implemented in its complex natural setting, the daily dementia care, receives insufficient attention (Burgio et al., 2001). In this respect Hulscher, Laurant, and Grol (2005) and Vernooij-Dassen and Moniz-Cook (2014) refer to the type III error, the so-called implementation-error, which should be given similar attention as the attention given to the type I and type II errors in research. The implementation error is a threat to the internal validity, i.e. the study shows no effects because of a poorly implemented intervention. In that case conclusions drawn from the research on the effectiveness of the intervention will have little value (Moniz-Cook et al., 2008) and thus are in fact a waste of money and effort (Glasgow, Klesges, Dziewaltowski, Estabrooks, & Vogt, 2006). The present study is designed as an implementation study, and aims to provide more insight in the implementation effectiveness of VCM and other new psychosocial methods in daily dementia care. The qualitative information from the interviews and focus groups will help to understand and explain possible causes and contextual factors associated with the change of attitude and behaviour of the caregivers. This information will provide more insight on how to prevent

the implementation error. Having the implementation error under control will help to draw more valid conclusions from intervention studies in dementia care and care in general.

This study aims to contribute to the successful implementation of psychosocial methods in daily dementia care. The degree of implementation effectiveness will be determined in a structured way by using the RE-AIM framework. The RE-AIM framework has proved to be a suitable model to evaluate the literature on the implementation effectiveness of psychosocial interventions in the daily nursing home dementia care (Boersma et al., 2015). To our knowledge, the implementation effectiveness of a newly implemented psychosocial intervention in the daily nursing home dementia care has never been mapped comprehensively in an empirical study by means of the RE-AIM framework. We expect that the operationalization of the five constructs of the RE-AIM framework will be very useful for implementing new psychosocial interventions in daily dementia care in nursing homes. As such this research will contribute to the field of implementation research and will help innovate dementia care.

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Ethical considerations

This research project has been approved by the Medical Ethics Committee of the VU Medical Centre in Amsterdam, the Netherlands.

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Appendix

Quality of Caregivers' Behaviour in dementia care

Tables A1 and A2 describe the original dialectical framework of Kitwood (1997), the adapted schemes of Van Weert et al. (2006) and the slightly modified scheme for the present study of the implementation of the Veder method in daily dementia care. Table A1 describes the positive person work categories and the descriptions of these categories. Table A2 describes the malignant social psychology and descriptions of these categories.

Description of the positive person work (PPW) categories in the present study:

Recognition: Acknowledging a man or woman who has dementia as a person, knowing that person by name and affirming him/her in his/her uniqueness.

Negotiation: Consulting with the person with dementia about his/her preferences, desires and needs, rather than being conformed to others' assumptions.

Enabling: Giving the resident the opportunity to take care of him- or herself as much as possible and just 'completing' the care when necessary. The caregiver takes into account the capabilities of the resident, making it possible to optimize the actual interaction between caregiver and the person who needs care.

Play: Showing spontaneity and self-expression (an experience that has value in itself), making jokes, laughing with the resident.

Validation: Acknowledging the (subjective) reality of a person's emotions and feelings, and giving a response on the feeling level, without correcting the residents' reality. Validation involves accepting the subjective truth of a resident,

Table A1. Original and modified schemes of positive person work.

Dialectical framework*	Positive person work (PPW)	
	Adapted observation scheme Van Weert et al. (2006)	Adapted observation scheme Present study
Recognition	Recognition	Recognition
Negotiation	Negotiation	Negotiation
Collaboration	Enabling	Enabling
Facilitation		
Play	Play	Play
Stimulation	Stimulation	— [‡]
Validation	Validation	Validation
—	Distraction [§]	Distraction
—	Empathize [§]	Empathize
—	Making contact [§]	Making contact
—	Respecting privacy [§]	— [‡]
—	Sense activation [§]	Sense activation
Relaxation	— [°]	Relaxation
Holding	— [°]	Holding
Celebration	— [°]	Celebration

Note: *Kitwood (1997) interactions.

^a Excluded because not observed during pilot study Van Weert et al. (2006).

[°] Excluded because not applicable to morning care in study Van Weert et al. (2006).

[§] Added because observed in study Van Weert et al. (2006).

[×] Added because observed in present study.

[‡] Excluded because not applicable in present study.

Table A2. Original and modified schemes of malignant social psychology (MSP).

Dialectical framework*	Malignant social psychology (MSP)	
	Adapted observation scheme Van Weert et al. (2006)	Adapted observation scheme Present study
Treachery	Treachery	Treachery
Disempowerment	— ^a	—
Infantilization	Infantilization	Infantilization
	Disabling [§]	Disabling
	— ^a	—
Intimidation		
Labelling		
Stigmatization	Prejudice	Prejudice
Objectification		
Outpacing	Outpacing	Outpacing
		Ignoring feelings and emotions [×]
		Ignoring
Ignoring	Ignoring	
Banishment		
Imposition	Imposition	Imposition
Withholding	Withholding	Withholding
Accusation	Accusation	Accusation
Disruption	Disruption	Disruption
Mockery	— ^a	—
Disparagement	— ^a	—
—		
—	Testing knowledge [§]	Testing knowledge
Invalidation	Invalidation	Invalidation

Note: *Kitwood (1997) interactions.

^a Excluded because not observed during pilot study Van Weert et al. (2006).

[°] Excluded because not applicable to morning care in study Van Weert et al. (2006).

[§] Added because observed in study Van Weert et al. (2006).

[×] Added because observed in present study.

[‡] Excluded because not applicable in present study.

attempting to understand a person's entire frame of reference even if it is chaotic or paranoid or filled with hallucinations.

Distraction: Distracting a resident in a positive way by guiding the conversation away from something unpleasant for the resident or to take the resident's mind off things. The aim of distracting is to influence mood and behaviour of the resident in a positive way.

Empathize: Accepting the feelings and emotions of a resident and showing warmth and affection to meet the needs of a resident.

Making contact: Giving the resident attention as a person explicitly to contact. Making contact means responding to what a resident indicates but also giving attention to a resident when he/she does not specifically ask for it.

Sense activation: Trying to find a way into the experienced world of the resident by means of active sensory stimulation (setting in motion the senses such as smell, hearing, sight, taste and touch).

Relaxation: Seeing the importance of creating a relaxing atmosphere. Of all forms of interaction this has the lowest level of intensity and speed.

Holding: Providing safety, comfort and security for the resident.

Celebration: Sociability; recognize, support and experience joy for what the resident can do and achieve. This results in a shared joyful experience. So there is no distinction between the two parties (the caregiver and the resident), they go together hand in hand.

Description of the malignant social psychology (MSP) categories in the present study:

Treachery: Using some form of deception to mislead or manipulate a person, or force them into compliance.

Infantilization: Treating a person very patronizingly, like a parent who is insensitive or insecure might treat a very young child.

Disabling: Not allowing a person to use the abilities that he/she does have; failing to help him/her to complete actions that they have initiated. Not taking notice of the possibilities of a person.

Prejudice: Not looking upon a resident and treating the resident as a human being or 'normal' person. Always thinking the resident is confused and does not understand anything. In the worst case, the resident is treated as an object, an alien or an outcast.

Outpacing: Providing information, presenting choices, and so on, at a rate too fast for a person to understand; putting him/her under pressure to do things more rapidly than he/she can bear.

Ignoring feelings and emotions: Failure to accept the subjective reality of a resident and neglect the feelings of a resident.

Ignoring: Carrying on (in action or conversation) in the presence of a person as if he/she is not there.

Imposition: Forcing a person to do something, overriding desire or denying the possibility of choice on his/her part.

Withholding: Refusing to respond to, and ask for, attention or to meet an evident need; for example for affectionate contact.

Accusation: Blaming a person for actions or failures of action that arise from his/her lack of ability or his/her misunderstanding of the situation.

Disruption: Roughly intruding on a person's action or inaction; crudely breaking his/her 'frame of reference'.

Testing knowledge: Asking questions about (for a resident difficult) facts instead of trying to fit in the resident's environment.

Invalidation: Failing to acknowledge the subjective reality of a person's experience and especially what he/she is feeling.